SmartFluxx SA604

Nitrogen Membrane Module

Product Information Sheet

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture Information:

Parker Hannifin Manufacturing Netherlands (Filtration & Separation) B.V.
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Oude Kerkstraat 4
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Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing, pre-delivery**
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nitrogen[1] flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	0.20 (0.12)	0.32 (0.19)	0.50 (0.29)	0.73 (0.43)	0.84 (0.49)	1.04 (0.61)
5 bar g (72.5 psi g)	0.28 (0.16)	0.46 (0.27)	0.73 (0.43)	0.92 (0.54)	1.17 (0.69)	1.54 (0.91)
6 bar g (87 psi g)	0.44 (0.21)	0.60 (0.35)	0.92 (0.54)	1.20 (0.71)	1.53 (0.9)	1.75 (1.03)
7 bar g (101.5 psi g)	0.44 (0.26)	0.71 (0.42)	1.16 (0.68)	1.49 (0.88)	1.90 (1.12)	2.10 (1.24)
8 bar g (116 psi g)	0.54 (0.32)	0.85 (0.5)	1.31 (0.77)	1.75 (0.77)	2.17 (1.28)	2.60 (1.53)
9 bar g (130.5 psi g)	0.59 (0.35)	0.97 (0.57)	1.54 (0.91)	2.08 (1.22)	2.50 (1.47)	3.00 (1.77)
10 bar g (145 psi g)	0.67 (0.39)	1.11 (0.65)	1.78 (1.05)	2.29 (1.35)	2.80 (1.65)	3.40 (2)
11 bar g (159.5 psi g)	0.73 (0.43)	1.25 (0.74)	1.95 (1.15)	2.57 (1.51)	3.20 (1.88)	3.90 (2.3)
12 bar g (174 psi g)	0.79 (0.46)	1.39 (0.82)	2.17 (1.28)	2.80 (1.65)	3.40 (2)	4.20 (2.47)
13 bar g (118.5 psi g)	0.89 (0.52)	1.49 (0.88)	2.40 (1.41)	3.10 (1.82)	3.80 (2.24)	4.80 (2.83)

Purity %	Feed-air consumption at nitrogen flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	1.9 (1.1)	1.8 (1.1)	1.9 (1.1)	2.3 (1.4)	2.3 (1.4)	2.5 (1.5)
5 bar g (72.5 psi g)	2.2 (1.3)	2.3 (1.4)	2.6 (1.5)	2.7 (1.6)	3.0 (1.8)	3.6 (2.1)
6 bar g (87 psi g)	2.5 (1.5)	2.8 (1.6)	3.2 (1.9)	3.4 (2)	3.9 (2.3)	4.0 (2.4)
7 bar g (101.5 psi g)	3.0 (1.8)	3.3 (1.9)	3.9 (2.3)	4.2 (2.5)	4.8 (2.8)	4.7 (2.8)
8 bar g (116 psi g)	3.5 (2.1)	3.8 (2.2)	4.4 (2.6)	4.9 (2.9)	5.4 (3.2)	5.8 (3.4)
9 bar g (130.5 psi g)	3.7 (2.2)	4.3 (2.5)	5.1 (3)	5.8 (3.4)	6.3 (3.7)	6.7 (3.9)
10 bar g (145 psi g)	4.1 (2.4)	4.8 (2.8)	5.9 (3.5)	6.3 (3.7)	7.0 (4.1)	7.5 (4.4)
11 bar g (159.5 psi g)	4.4 (2.6)	5.3 (3.1)	6.3 (3.7)	7.1 (4.2)	7.9 (4.6)	8.5 (5)
12 bar g (174 psi g)	4.6 (2.7)	5.9 (3.5)	7.0 (4.1)	7.7 (4.5)	8.4 (4.9)	9.3 (5.5)
13 bar g (118.5 psi g)	5.5 (3.2)	6.4 (3.8)	7.9 (4.6)	8.7 (5.1)	9.5 (5.6)	10.7 (6.3)

Maximum pressure drop <0.1 bar.
Values between brackets are indicative imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.

[2] m³/hr refers to conditions at 1013 mbar(a) and 20°C

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	13.0 bar g (190 psi g)
Min. / Max. operating temperature	+2°C to +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m³ (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Material

Housing	Steel
Tube	Aluminum
Coating (housing)	ESPC to RAL 7039 (Quartz Grey)
Coating (tube)	none

Services Available on Request

3D model CAD STEP file

Weight, Dimensions and Connections

Dimensions H x W x D	758 x 80 x 63 mm (29.84" x 3.15" x 2.48")
Weight	3.2 kg (7.05 lb)
Connection feed-air	G3/8" female to ISO 228
Connection nitrogen enriched air	G3/8" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G3/8" female to ISO 228
Dimensional drawing	Refer to K3.1.344

Note

Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

Catalogue: S3.1.245a
10/11

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SmartFluxx SA708

Nitrogen membrane module

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

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Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing,** pre-delivery
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nominal nitrogen[1] flow rate in m³/hr[2] (SCFM)[2]							
	99.5	99	98	97	96	95	93	90
4 bar g (58 psi g)	0.90 (0,53)	1.44 (0,85)	2.20 (1,3)	2.91 (1,71)	3.63 (2,14)	4.36 (2,57)		
5 bar g (72.5 psi g)	1.31 (0,77)	2.06 (1,21)	3.09 (1,82)	4.05 (2,38)	5.10 (3)	6.15 (3,62)		
6 bar g (87 psi g)	1.71 (1)	2.67 (1,57)	3.99 (2,35)	5.18 (3,05)	6.56 (3,86)	7.94 (4,67)	11.3 (6,62)	18.2 (10,7)
7 bar g (101.5 psi g)	2.11 (1,24)	3.27 (1,93)	4.90 (2,89)	6.46 (3,8)	8.12 (4,78)	9.78 (5,76)	13.8 (8,1)	22.1 (13)
8 bar g (116 psi g)	2.50 (1,47)	3.87 (2,28)	5.82 (3,42)	7.73 (4,55)	9.67 (5,69)	11.6 (6,84)	16.4 (9,63)	26.6 (15,7)
9 bar g (130.5 psi g)	2.81 (1,66)	4.46 (2,62)	6.77 (3,98)	9.03 (5,32)	11.27 (6,63)	13.5 (7,95)	19.0 (11,2)	30.8 (18,1)
10 bar g (145 psi g)	3.12 (1,84)	4.94 (2,91)	7.64 (4,5)	10.3 (6,08)	12.9 (7,57)	15.4 (9,06)	21.7 (12,8)	35.6 (21)
11 bar g (159.5 psi g)	3.41 (2)	5.46 (3,21)	8.49 (5)	11.5 (6,78)	14.5 (8,51)	17.3 (10,2)		
12 bar g (174 psi g)	3.68 (2,16)	5.96 (3,51)	9.32 (5,49)	12.5 (7,38)	15.9 (9,35)	19.1 (11,2)		
13 bar g (188.5 psi g)	3.93 (2,32)	6.45 (3,8)	10.1 (5,92)	13.6 (7,98)	17.1 (10,1)	20.9 (12,3)		

Purity %	nominal feed-air consumption at nitrogen flow rate in m³/hr[2] (SCFM)[2]							
	99.5	99	98	97	96	95	93	90
4 bar g (58 psi g)	7.5 (4,4)	8.6 (5,1)	9.0 (5,3)	9.5 (5,6)	10.4 (6,1)	11.2 (6,6)		
5 bar g (72.5 psi g)	10.1 (6)	11.5 (6,7)	11.7 (6,9)	12.6 (7,4)	14.0 (8,2)	15.2 (8,9)		
6 bar g (87 psi g)	12.3 (7,2)	13.8 (8,1)	14.2 (8,4)	15.3 (9)	17.1 (10,1)	18.8 (11,1)	22.6 (13,3)	29.9 (17,6)
7 bar g (101.5 psi g)	14.7 (8,6)	16.2 (9,6)	17.1 (10)	18.7 (11)	20.8 (12,2)	22.7 (13,4)	27.1 (16)	36.0 (21,2)
8 bar g (116 psi g)	16.5 (9,7)	18.5 (10,9)	19.7 (11,6)	21.9 (12,9)	24.4 (14,4)	26.5 (15,6)	31.8 (18,7)	42.8 (25,2)
9 bar g (130.5 psi g)	18.5 (10,9)	21.1 (12,4)	22.7 (13,4)	25.6 (15,1)	28.3 (16,7)	30.6 (18)	36.8 (21,6)	49.4 (29,1)
10 bar g (145 psi g)	20.4 (12)	23.2 (13,7)	25.5 (15)	29.2 (17,2)	32.1 (18,9)	34.8 (20,5)	42.0 (24,7)	57.2 (33,7)
11 bar g (159.5 psi g)	22.1 (13)	25.5 (15)	28.3 (16,6)	32.4 (19,1)	36.1 (21,2)	39.0 (23)		
12 bar g (174 psi g)	24.1 (14,2)	27.9 (16,4)	31.3 (18,4)	35.5 (20,9)	39.8 (23,4)	43.3 (25,5)		
13 bar g (188.5 psi g)	25.9 (15,3)	30.9 (18,2)	34.3 (20,2)	38.8 (22,8)	43.2 (25,5)	47.8 (28,1)		

Maximum pressure drop at Purity <0.2 bar
Values between brackets are indicative of imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.

[2] m³/hr refers to conditions at 1013 mbar(a) and 20°C

For purities >99.5% please contact Parker

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	13.0 bar g (190 psi g)
Min. / Max. operating temperature	+2°C / +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m³ (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	15 bar g[4] (217 psi g) [4]
Design temperature	65°C[4] (149°F) [4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Services Available on Request

3D model CAD STEP file

Weight, Dimensions and Connections

Dimensions H x Ø D	782 x 114 mm (30.79” x 4.49”)
Weight	5.5 kg (12.1 lb)
Connection feed-air	G3/4” female to ISO 228
Connection nitrogen enriched air	G3/4” female to ISO 228
Connection oxygen enriched air at atmospheric pressure enriched air	G 1” female to ISO 228
Dimensional drawing	Refer to K3.1.383

Note

Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com/dhfns**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

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SmartFluxx SA1508

Nitrogen Membrane Module

Product Information Sheet

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture Information:

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Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing, pre-delivery**
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nitrogen[1] flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	2.8 (1.6)	4.0 (2.4)	5.7 (3.4)	7.1 (4.2)	9.5 (5.6)	10.9 (6.4)
5 bar g (72.5 psi g)	3.7 (2.2)	5.3 (3.1)	7.9 (4.6)	10.2 (6)	12.8 (7.5)	15.2 (8.9)
6 bar g (87 psi g)	4.7 (2.8)	7.0 (4.1)	10.2 (6)	13.0 (7.7)	15.7 (9.2)	20.5 (12.1)
7 bar g (101.5 psi g)	6.1 (3.6)	8.5 (5)	12.3 (7.2)	16.5 (9.7)	19.5 (11.5)	24.3 (14.3)
8 bar g (116 psi g)	6.9 (4.1)	9.7 (5.7)	14.3 (8.4)	20.2 (11.9)	23.3 (13.7)	28.1 (16.5)
9 bar g (130.5 psi g)	7.8 (4.6)	11.1 (6.5)	17.0 (10)	22.2 (13.1)	27.0 (15.9)	32.2 (19)
10 bar g (145 psi g)	8.6 (5.1)	12.6 (7.4)	18.5 (10.9)	24.2 (14.2)	30.2 (17.8)	37.4 (22)
11 bar g (159.5 psi g)	9.6 (5.7)	14.2 (8.4)	20.7 (12.2)	27.3 (16.1)	33.0 (19.4)	41.0 (24.1)
12 bar g (174 psi g)	10.5 (6.2)	15.2 (8.9)	22.9 (13.5)	29.5 (17.4)	36.6 (21.5)	45.6 (26.8)
13 bar g (118.5 psi g)	11.3 (6.7)	16.3 (9.6)	24.9 (14.7)	32.0 (18.8)	39.5 (23.2)	48.8 (28.7)

Purity %	Feed-air consumption at nitrogen flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	21 (12)	21 (12)	22 (13)	22 (13)	26 (15)	27 (16)
5 bar g (72.5 psi g)	24 (14)	26 (15)	29 (17)	31 (18)	34 (20)	36 (21)
6 bar g (87 psi g)	29 (17)	33 (19)	36 (21)	38 (22)	41 (24)	48 (28)
7 bar g (101.5 psi g)	36 (21)	38 (22)	41 (24)	48 (28)	50 (29)	56 (33)
8 bar g (116 psi g)	38 (22)	42 (25)	47 (28)	56 (33)	58 (34)	63 (37)
9 bar g (130.5 psi g)	44 (26)	48 (28)	55 (32)	62 (36)	67 (39)	72 (42)
10 bar g (145 psi g)	50 (29)	56 (33)	61 (36)	68 (40)	75 (44)	84 (49)
11 bar g (159.5 psi g)	51 (30)	60 (35)	66 (39)	74 (44)	80 (47)	91 (54)
12 bar g (174 psi g)	57 (34)	65 (38)	76 (45)	83 (49)	92 (54)	103 (61)
13 bar g (118.5 psi)	66 (39)	72 (42)	85 (50)	92 (54)	101 (59)	113 (67)

Maximum pressure drop at Purity≤5%: <0.2 bar
Maximum pressure drop at Purity>5%: 0.1 to 0.5 bar
Values between brackets are indicative of imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.

[2] m³/hr refers to conditions at 1013 mbar(a) and 20°C

For purities >99.5% please contact Parker

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	13.0 bar g (190 psi g)
Min. / Max. operating temperature	+2°C / +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m³ (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20ºC	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20ºC	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	15 bar g[4] (217 psi g) [4]
Design temperature	65ºC[4] (149ºF) [4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Services Available on Request

Material certificates EN10204-3.1 on housing material (for Stainless Steel only)
3D model CAD STEP file

Weight, Dimensions and Connections

Dimensions H x Ø D	1655 x 114 mm (65.12" x 4.49")
Weight	6.8 kg (15 lb)
Connection feed-air	G3/4" female to ISO 228
Connection nitrogen enriched air	G3/4" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G 1" female to ISO 228
Dimensional drawing	Refer to K3.1.330

Note

Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

Catalogue: S3.1.243b
10/11

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SmartFluxx SA1508SS

Nitrogen Membrane Module

Product Information Sheet

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture Information:

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The Netherlands

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Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing, pre-delivery**
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nitrogen[1] flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	2.8 (1.6)	4.0 (2.4)	5.7 (3.4)	7.1 (4.2)	9.5 (5.6)	10.9 (6.4)
5 bar g (72.5 psi g)	3.7 (2.2)	5.3 (3.1)	7.9 (4.6)	10.2 (6)	12.8 (7.5)	15.2 (8.9)
6 bar g (87 psi g)	4.7 (2.8)	7.0 (4.1)	10.2 (6)	13.0 (7.7)	15.7 (9.2)	20.5 (12.1)
7 bar g (101.5 psi g)	6.1 (3.6)	8.5 (5)	12.3 (7.2)	16.5 (9.7)	19.5 (11.5)	24.3 (14.3)
8 bar g (116 psi g)	6.9 (4.1)	9.7 (5.7)	14.3 (8.4)	20.2 (11.9)	23.3 (13.7)	28.1 (16.5)
9 bar g (130.5 psi g)	7.8 (4.6)	11.1 (6.5)	17.0 (10)	22.2 (13.1)	27.0 (15.9)	32.2 (19)
10 bar g (145 psi g)	8.6 (5.1)	12.6 (7.4)	18.5 (10.9)	24.2 (14.2)	30.2 (17.8)	37.4 (22)
11 bar g (159.5 psi g)	9.6 (5.7)	14.2 (8.4)	20.7 (12.2)	27.3 (16.1)	33.0 (19.4)	41.0 (24.1)
12 bar g (174 psi g)	10.5 (6.2)	15.2 (8.9)	22.9 (13.5)	29.5 (17.4)	36.6 (21.5)	45.6 (26.8)
13 bar g (118.5 psi g)	11.3 (6.7)	16.3 (9.6)	24.9 (14.7)	32.0 (18.8)	39.5 (23.2)	48.8 (28.7)

Purity %	Feed-air consumption at nitrogen flow rate in m³/hr[2] (SCFM)[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	21 (12)	21 (12)	22 (13)	22 (13)	26 (15)	27 (16)
5 bar g (72.5 psi g)	24 (14)	26 (15)	29 (17)	31 (18)	34 (20)	36 (21)
6 bar g (87 psi g)	29 (17)	33 (19)	36 (21)	38 (22)	41 (24)	48 (28)
7 bar g (101.5 psi g)	36 (21(	38 (22)	41 (24)	48 (28)	50 (29)	56 (33)
8 bar g (116 psi g)	38 (22)	42 (25)	47 (28	56 (33)	58 (34)	63 (37)
9 bar g (130.5 psi g)	44 (26)	48 (28)	55 (32)	62 (36)	67 (39)	72 (42)
10 bar g (145 psi g)	50 (29)	56 (33)	61 (36)	68 (40)	75 (75)	84 (44)
11 bar g (159.5 psi g)	51 (30)	60 (35)	66 (39)	74 (44)	80 (47)	91 (54)
12 bar g (174 psi g)	57 (34)	65 (38)	76 (45)	83 (49)	92 (54)	103 (61)
13 bar g (118.5 psi g)	66 (39)	72 (42)	85 (50)	92 (54)	101 (59)	113 (67)

Maximum pressure drop at Purity≤5%: <0.2 bar
Maximum pressure drop at Purity>5%: 0.1 to 0.5 bar
Values between brackets are indicative of imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.

[2] m³/hr refers to conditions at 1013 mbar(a) and 20°C

For purities >99.5% please contact Parker

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Mechanical Design Housing

Design pressure	15 bar g[4] (217 psi g)[4]
Design temperature	65°C[4] (149°F)[4]

[4]Membrane operating limits are lower

Operating Condtions Feed-air

Maximum operating pressure	13.0 bar g (190 psi g)
Min. / Max. operating temperature	+2°C to +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m³ (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Material

Housing	Stainless Steel
Coating	None

Services Available on Request

Material certificates EN10204-3.1 on housing material (for Stainless Steel only)
3D model CAD STEP file

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Weight, Dimensions and Connections

Dimensions H x Ø D	1654 x 114 mm (65.12" x 4.49")
Weight	18 kg (40 lb)
Connection feed-air	G3/4" female to ISO 228
Connection nitrogen enriched air	G3/4" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G 1" female to ISO 228
Dimensional drawing	Refer to K3.1.330

Note

Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

Catalogue: S3.1.248b
10/11

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Project Product Information Sheet

SmartFluxx SA1508-SPT5

Nitrogen membrane module

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture information:

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Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing,** pre-delivery No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nominal nitrogen[1] flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	2,8 (1,6)	4,0 (2,4)	5,7 (3,4)	7,1 (4,2)	9,5 (5,6)	10,9 (6,4)
5 bar g (72.5 psi g)	3,7 (2,2)	5,3 (3,1)	7,9 (4,6)	10,2 (6)	12,8 (7,5)	15,2 (8,9)
6 bar g (87 psi g)	4,7 (2,8)	7,0 (4,1)	10,2 (6)	13,0 (7,7)	15,7 (9,2)	20,5 (12,1)
7 bar g (101.5 psi g)	6,1 (3,6)	8,5 (5)	12,3 (7,2)	16,5 (9,7)	19,5 (11,5)	24,3 (14,3)
8 bar g (116 psi g)	6,9 (4,1)	9,7 (5,7)	14,3 (8,4)	20,2 (11,9)	23,3 (13,7)	28,1 (16,5)

Purity %	Nominal feed-air consumption at nitrogen flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	21 (12)	21 (12)	22 (13)	22 (13)	26 (15)	27 (16)
5 bar g (72.5 psi g)	24 (14)	26 (15)	29 (17)	31 (18)	34 (20)	36 (21)
6 bar g (87 psi g)	29 (17)	33 (19)	36 (21)	38 (22)	41 (24)	48 (28)
7 bar g (101.5 psi g)	36 (21)	38 (22)	41 (24)	48 (28)	50 (29)	56 (33)
8 bar g (116 psi g)	38 (22)	42 (25)	47 (28)	56 (33)	58 (34)	63 (37)

Maximum pressure drop <0.2 bar (3 psi)
Values between brackets are indicative imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.
[2] m3/hr (CFM) refers to conditions at 1013 mbar(a) (14.7 psi a) and 20°C (68°F)

Ambient Conditions

Ambient temperature	+2°C to +60°C (+36°F to +140°F)
Ambient pressure	Atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	8.0 bar g (116 psi g)
Min. / Max. operating temperature	+2°C to +60°C (+36°F to +140°F)
Maximum oil vapour content	<0.01 mg/m3 (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]
Feed-air consumption at feed-air temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	15 bar g (217 psi g)[4]
Design temperature	65°C (149°F) [4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Services Available on Request

Material certificates EN10204-3.1 on housing material (for Stainless Steel only)
3D model CAD STEP file

Weight, Dimensions, Connections and Part number

Dimensions H x Ø D	1654 x 114 mm (65.12" x 4.49")
Weight	6.8 kg (15 lb)
Connection feed-air	G3/4" female to ISO 228
Connection nitrogen enriched air	G3/4" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G 1" female to ISO 228
Dimensional drawing	Refer to K3.1.330
Part number	159.005760

Note
Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Catalogue: S3.1.275 03/15

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Project Product Information Sheet

SmartFluxx SA1508SS-SPT5

Nitrogen membrane module

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture information:

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Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing,**
  pre-delivery No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nominal nitrogen[1] flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	2,8 (1,6)	4,0 (2,4)	5,7 (3,4)	7,1 (4,2)	9,5 (5,6)	10,9 (6,4)
5 bar g (72.5 psi g)	3,7 (2,2)	5,3 (3,1)	7,9 (4,6)	10,2 (6)	12,8 (7,5)	15,2 (8,9)
6 bar g (87 psi g)	4,7 (2,8)	7,0 (4,1)	10,2 (6)	13,0 (7,7)	15,7 (9,2)	20,5 (12,1)
7 bar g (101.5 psi g)	6,1 (3,6)	8,5 (5)	12,3 (7,2)	16,5 (9,7)	19,5 (11,5)	24,3 (14,3)
8 bar g (116 psi g)	6,9 (4,1)	9,7 (5,7)	14,3 (8,4)	20,2 (11,9)	23,3 (13,7)	28,1 (16,5)

Purity %	Nominal feed-air consumption at nitrogen flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	21 (12)	21 (12)	22 (13)	22 (13)	26 (15)	27 (16)
5 bar g (72.5 psi g)	24 (14)	26 (15)	29 (17)	31 (18)	34 (20)	36 (21)
6 bar g (87 psi g)	29 (17)	33 (19)	36 (21)	38 (22)	41 (24)	48 (28)
7 bar g (101.5 psi g)	36 (21)	38 (22)	41 (24)	48 (28)	50 (29)	56 (33)
8 bar g (116 psi g)	38 (22)	42 (25)	47 (28)	56 (33)	58 (34)	63 (37)

Maximum pressure drop <0.2 bar (3 psi)
Values between brackets are indicative imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.
[2] m3/hr (CFM) refers to conditions at 1013 mbar(a) (14.7 psi a) and 20°C (68°F)

Ambient Conditions

Ambient temperature	+2°C to +60°C (+36°F to +140°F)
Ambient pressure	Atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	8.0 bar g (116 psi g)
Min. / Max. operating temperature	+2°C to +60°C (+36°F to +140°F)
Maximum oil vapour content	<0.01 mg/m3 (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]
Feed-air consumption at feed-air temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	15 bar g (217 psi g)[4]
Design temperature	65°C (149°F) [4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Stainless Steel
Coating	None

Services Available on Request

Material certificates EN10204-3.1 on housing material (for Stainless Steel only)
3D model CAD STEP file

Weight, Dimensions, Connections and Part number

Dimensions H x Ø D	1654 x 114 mm (65.12" x 4.49")
Weight	18 kg (40 lb)
Connection feed-air	G3/4" female to ISO 228
Connection nitrogen enriched air	G3/4" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	G 1" female to ISO 228
Dimensional drawing	Refer to K3.1.358
Part number	159.005761

Note
Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

Catalogue: S3.1.276 03/15

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SmartFluxx SA15020

Nitrogen Membrane Module

Product Information Sheet

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost-effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture Information:

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Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing, pre-delivery**
  No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nitrogen[1] flow rate in m³/hr[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	17 (10)	25 (15)	36 (21)	47 (28)	57 (34)	70 (41)
5 bar g (72.5 psi g)	23 (14)	33 (19)	49 (29)	66 (39)	82 (48)	93 (55)
6 bar g (87 psi g)	29 (17)	43 (25)	63 (37)	83 (49)	102 (60)	120 (71)
7 bar g (101.5 psi g)	37 (22)	53 (31)	78 (46)	100 (59)	125 (74)	154 (91)
8 bar g (116 psi g)	44 (26)	62 (36)	90 (53)	117 (69)	144 (85)	178 (105)
9 bar g (130.5 psi g)	49 (29)	72 (42)	103 (61)	133 (78)	165 (97)	216 (127)

Purity %	Feed-air consumption at nitrogen flow rate in m³/hr[2]					
	99.5	99.0	98.0	97.0	96.0	95.0
4 bar g (58 psi g)	127 (75)	126 (74)	135 (79)	145 (85)	155 (91)	169 (99)
5 bar g (72.5 psi g)	144 (85)	155 (91)	171 (101)	194 (114)	216 (127)	218 (128)
6 bar g (87 psi g)	170 (100)	191 (112)	214 (126)	239 (141)	261 (154)	276 (162)
7 bar g (101.5 psi g)	202 (119)	223 (131)	258 (152)	281 (165)	315 (185)	348 (205)
8 bar g (116 psi g)	232 (137)	255 (150)	293 (172)	323 (190)	361 (212)	399 (235)
9 bar g (130.5 psi g)	264 (155)	298 (175)	335 (197)	369 (217)	413 (243)	485 (285)

Maximum pressure drop at Purity≤5%: ≤0.2 bar
Maximum pressure drop at Purity>5%: > 0.1 to 0.5 bar
Values between brackets are indicative imperial values"

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.
[2] m³/hr refers to conditions at 1013 mbar(a) and 20°C

For higher purities please contact Parker

Ambient Conditions

Ambient temperature	+2°C to +50°C (+36°F to 122°F)
Ambient pressure	atmospheric
Air quality	clean air without contaminants

Mechanical Design Housing

Design pressure	14 bar g[4] (203 psi g)[4]
Design temperature	65°C[4] (149°F)[4]

[4]Membrane operating limits are lower

Operating Conditions Feed-air

Maximum operating pressure	9.0 bar g (130.5 psi g)
Min. / Max. operating temperature	+2°C to +50°C (+36°F to 122°F)
Maximum oil vapour content	<0.01 mg/m³ (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Services Available on Request

3D model CAD STEP file

Flow Rate Corrections

Nitrogen flow rate at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]
Feed-air consumption at feed-air temperatures other than 20°C	Use bulletin S3.1.240[3]

[3] Revision number may vary, make sure to use the most recent revision

Weight, Dimensions and Connections

Dimensions H x Ø D	1740 x 280 mm (68.50" x 11.02")
Weight	46 kg (102 lb)
Connection feed-air	G 2 1/2" female to ISO 228
Connection nitrogen enriched air	G 2 1/2" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	100mm (3.94") OD
Dimensional drawing	Refer to K3.1.339

Note
Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

Parker has a continuous policy of product development and although the company reserves the right to change specifcations, it attemps to keep customers informed of any alterations.

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10/11

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Project Product Information Sheet

SmartFluxx SA15020-SPT5

Nitrogen membrane module

Parker hollow-fibre membrane modules produce nitrogen gas from compressed air to offer a cost effective, reliable and safe alternative to traditional cylinder or liquid nitrogen gas supplies.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

Parker modules can be built into a custom-made nitrogen generator or can be integrated with your (production) process to provide an on-demand, continuous source of nitrogen gas. Gas which can be used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Manufacture information:

Parker Hannifin Manufacturing Netherlands (Filtration & Separation) B.V.
domnick hunter Filtration and Separation Division
Oude Kerkstraat 4
4878 AA Etten-Leur
The Netherlands

Tel: +31 (0)76 508 53 00
Fax: +31 (0)76 508 53 33
Email: pfsinfo@parker.com

Benefits:

- **Less membrane modules needed per nitrogen system**
  More nitrogen per fibre is produced from Parker hollow fibre membranes than any other in the world
- **Use of low pressure standard industrial compressor**
  No high pressure compressor needed to obtain required nitrogen flow
- **Energy savings**
  Operation at a low pressure requires less energy
- **Reduced CO_2 emissions**
  No heater required to open polymer membrane structure, thus reducing the energy consumption
- **Robust fibre**
  Most tolerant fibre to particle contamination
- **Large membrane diameter**
  Lowest membrane module pressure drop
- **Strong engineering plastic**
  Life-expectancy of more than 10 years
- **Factory membrane ageing,** pre-delivery No performance decrease over time due to fibre ageing
- **Quick start-up time**
  Required nitrogen purity is produced instantly, no time needed to heat-up
- **Flexible mounting arrangements**
  Can be mounted horizontal or vertical
- **Low noise operation**
  Radiated noise generated by membrane technology is extremely low
- **No maintenance required**
  No user serviceable parts
- **Small system footprint**
  Less modules needed to produce nitrogen requirements

Performance data

Purity %	Nominal nitrogen[1] flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	17 (10)	25 (15)	36 (21)	47 (28)	57 (34)	70 (41)
5 bar g (72.5 psi g)	23 (14)	33 (19)	49 (29)	66 (39)	82 (48)	93 (55)
6 bar g (87 psi g)	29 (17)	43 (25)	63 (37)	83 (49)	102 (60)	120 (71)
7 bar g (101.5 psi g)	37 (22)	53 (31)	78 (46)	100 (59)	125 (74)	154 (91)
8 bar g (116 psi g)	44 (26)	62 (36)	90 (53)	117 (69)	144 (85)	178 (105)

Purity %	Nominal feed-air consumption at nitrogen flow rate in m3/hr [2] (SCFM)[2]					
	99,5	99	98	97	96	95
4 bar g (58 psi g)	127 (75)	126 (74)	135 (79)	145 (85)	155 (91)	169 (99)
5 bar g (72.5 psi g)	144 (85)	155 (91)	171 (101)	194 (114)	216 (127)	218 (128)
6 bar g (87 psi g)	170 (100)	191 (112)	214 (126)	239 (141)	261 (154)	276 (162)
7 bar g (101.5 psi g)	202 (119)	223 (131)	258 (152)	281 (165)	315 (185)	348 (205)
8 bar g (116 psi g)	232 (137)	255 (150)	293 (172)	323 (190)	361 (212)	399 (235)

Maximum pressure drop <0.2 bar (3 psi)
Values between brackets are indicative imperial values

[1] Parker membranes separate oxygen from pressurised air. The composition of the product is determined by measuring the residual oxygen content. The nitrogen content is calculated by subtracting the residual oxygen content from 100 %. Air is composed of nitrogen (78.1%), oxygen (20.9 %), Argon (0.9 %), CO_2 (0.03 %), and some trace inert gases. Remember that the value that is normally called the nitrogen content actually is the inert gas content.
[2] m3/hr (CFM) refers to conditions at 1013 mbar(a) (14.7 psi a) and 20°C (68°F)

Ambient Conditions

Ambient temperature	+2°C to +60°C (+36°F to +140°F)
Ambient pressure	Atmospheric
Air quality	clean air without contaminants

Operating Conditions Feed-air

Maximum operating pressure	8.0 bar g (116 psi g)
Min. / Max. operating temperature	+2°C to +60°C (+36°F to +140°F)
Maximum oil vapour content	<0.01 mg/m3 (<0.01 ppm (w))
Particles	filtered at 0.01 µm cut off
Relative humidity	<100% (non condensing)

Flow Rate Corrections

Nitrogen flow rate at feed temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]
Feed-air consumption at feed-air temperatures other than 20°C (68°F)	Use bulletin S3.1.274[3]

[3] Revision number may vary, make sure to use the most recent revision

Mechanical Design Housing

Design pressure	14 bar g[4] (203 psi g)[4]
Design temperature	65°C[4] (149°F)[4]

[4] Membrane ambient and operating conditions are lower

Material

Housing	Aluminum
Coating	ESPC to RAL 7039 (Quartz Grey) Dry Film Thickness: 60 micron

Services Available on Request

3D model CAD STEP file

Weight, Dimensions, Connections and Part number

Dimensions H x Ø D	1740 x 280 mm (68.50" x 11.02")
Weight	46 kg (102 lb)
Connection feed-air	G2½" female to ISO 228
Connection nitrogen enriched air	G2½" female to ISO 228
Connection oxygen enriched air at atmospheric pressure	100 mm (3.94") OD
Dimensional drawing	Refer to K3.1.339
Part number	159.005759

Note
Parker membrane systems produce both nitrogen and oxygen enriched air. Nitrogen enriched air can cause suffocation and oxygen enriched air causes increased fire hazards. The oxygen enriched air is available at ambient pressure and pressure build-up of enriched oxygen at the outlet must be prevented, otherwise a serious (reversible) decrease in performance will result. The nitrogen enriched air produced should be treated as pressurised air.

For more information please contact your local sales office or visit **www.parker.com**

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